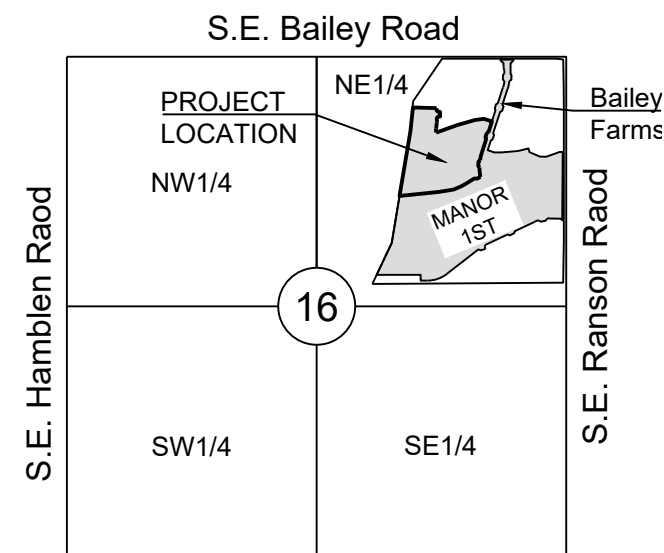


SANITARY MAIN EXTENSION PLANS FOR CORNERSTONE AT BAILEY FARMS, FIRST PLAT IN THE CITY OF LEE'S SUMMIT JACKSON COUNTY, MO

LEGEND:

- A/E - ACCESS EASEMENT
 - BC - BACK OF CURB
 - B/B - BACK TO BACK
 - BM - BENCHMARK
 - BL or B.L. - BUILDING LINE
 - CO - CLEANOUT
 - TJB - TELEPHONE JUNCTION BOX
 - C&G - CURB AND GUTTER
 - D/E - DRAINAGE EASEMENT
 - E/E - ELECTRICAL EASEMENT
 - EL - ELEVATION
 - FL - FLOW LINE
 - G/E - GAS LINE EASEMENT
 - HDPE - HIGH-DENSITY POLYETHYLENE
 - L/E - LANDSCAPE EASEMENT
 - MSFE - MINIMUM SERVICEABLE FLOOR ELEVATION
 - PVC - POLYVINYL CHLORIDE
 - P/L - PROPERTY LINE
 - PUB/E - PUBLIC EASEMENT
 - RCP - REINFORCED CONCRETE PIPE
 - ROW or RW - RIGHT-OF-WAY
 - S/E - SANITARY SEWER EASEMENT
 - SL - SERVICE LINE
 - SW - SIDEWALK
 - TE - TOP ELEVATION
 - U/E - UTILITY EASEMENT
 - WSE - WATER SURFACE ELEVATION
 - W/E - WATERLINE EASEMENT
-
- ASPHALT PAVEMENT - EXISTING
 - ASPHALT PAVEMENT - PROPOSED
 - CONCRETE PAVEMENT - EXISTING
 - CONCRETE SIDEWALK - EXISTING
 - CONCRETE SIDEWALK - PROPOSED
 - CURB & GUTTER
 - CURB & GUTTER - EXISTING
 - TREELINE
 - EXISTING LOT AND R/W LINES
 - EXISTING PLAT LINES
 - P/L PROPERTY LINES
 - ROW RIGHT-OF-WAY
 - SANITARY SEWER MAIN
 - SANITARY SEWER MAIN - EXIST.
 - STORM SEWER
 - STORM SEWER - EXISTING
 - CATV_x CABLE TV - EXISTING
 - FOC_x FIBER OPTIC CABLE - EXISTING
 - T_x TELEPHONE LINE - EXIST.
 - E_x ELECTRIC LINE - EXISTING
 - OHP_x OVERHEAD POWER LINE - EXIST.
 - UGE_x UNDERGROUND ELECTRIC - EX.
 - G_x GAS LINE - EXISTING
 - W_x WATERLINE - EXISTING
 - LIGHT - EXISTING
 - EXISTING MANHOLE
 - CLEANOUT
 - EXISTING SANITARY MANHOLE
 - PROPOSED SANITARY MANHOLE
 - EXISTING AREA INLET
 - EXISTING CURB INLET
 - EXISTING GRATE INLET
 - EXISTING JUNCTION BOX
 - EXISTING STORM MANHOLE



UTILITY CONTACTS:

MISSOURI DEPARTMENT OF TRANSPORTATION (MODOT)
Steve Holloway
600 NE Colbern Road
Lee's Summit, MO 64086
(816) 607-2186

MISSOURI GAS ENERGY (MGE)
Brent Jones
3025 SE Clover Drive
Lee's Summit, MO 64082
(816) 399-9633
brent.jones@spireenergy.com

EVERGY
Ron DeJarnette
1300 SE Hamblin Road
Lee's Summit, MO 64081
Office: (816) 347-4316
Cell: (816) 810-5234
ron.dejarnette@evergy.com

CITY OF LEE'S SUMMIT PUBLIC WORKS
Michael Park
220 SE Green Street
Lee's Summit, MO 64063
(816) 969-1800

AT&T
Mark Manion or Marty Loper
500 E. 8th Street, Room 370
Kansas City, MO 64106
(816) 275-2341 or (816) 275-1550

COMCAST CABLE
John Meadows
4700 Little Blue Parkway
Independence, MO 64057
(816) 795-2257

CITY OF LEE'S SUMMIT WATER UTILITIES
Mark Schaulfer
1200 SE Hamblin Road
Lee's Summit, MO 64081
(816) 969-1900

SUMMARY OF QUANTITIES			
	ITEM	QUANTITY	UNITS
1	10" PVC SDR-26	525	LF
2	8" PVC SDR-26	1350	LF
3	6" PVC SDR-26	1750	LF
4	10" x 6" WYES	7	EA
5	8" x 6" WYES	33	EA
6	STD. 4' DIAMETER MANHOLE	10	EA
7	CONNECT TO EXISTING MANHOLE	2	EA
8	EXTRA DEPTH IN MANHOLE	66	VF
9	TRACER WIRE AND BOXES	40	EA
10	ROCK EXCAVATION (ESTIMATED)	250	CY
11	MANHOLE BARREL ADJUSTMENT	4	EA
12	MANHOLE RING ADJUSTMENT	4	EA
13	EROSION CONTROL	1	LS
14	BONDS	1	LS

GENERAL NOTES:

- ALL CONSTRUCTION TO FOLLOW THE CITY OF LEE'S SUMMIT DESIGN AND CONSTRUCTION MANUAL AS ADOPTED BY ORDINANCE 5813.
- ALL WORKMANSHIP AND MATERIALS SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE ENGINEERING DEPARTMENT OF THE CITY OF LEE'S SUMMIT, MISSOURI.
- LINEAL FOOT MEASUREMENTS SHOWN ON THE PLANS ARE HORIZONTAL MEASUREMENTS, NOT SLOPE MEASUREMENTS. ALL PAYMENTS SHALL BE MADE ON HORIZONTAL MEASUREMENTS.
- THE UTILITY LOCATIONS SHOWN ON THESE PLANS ARE TAKEN FROM UTILITY COMPANY RECORDS AND APPARENT FIELD LOCATIONS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL ADHERE TO THE PROVISIONS OF THE SENATE BILL NUMBER 583, 78TH GENERAL ASSEMBLY OF THE STATE OF MISSOURI. THE BILL REQUIRES THAT ANY PERSON OR FIRM DOING EXCAVATION ON PUBLIC RIGHT OF WAY DO SO ONLY AFTER GIVING NOTICE TO, AND OBTAINING INFORMATION FROM, UTILITY COMPANIES. STATE LAW REQUIRES 48 HOURS ADVANCE NOTICE. THE CONTRACTOR MAY ALSO UTILIZE THE FOLLOWING TOLL FREE PHONE NUMBER PROVIDED BY "MISSOURI ONE CALL SYSTEM, INC.": 1-800-DIG-RITE. THIS PHONE NUMBER IS APPLICABLE ANYWHERE WITHIN THE STATE OF MISSOURI. PRIOR TO COMMENCEMENT OF WORK, THE CONTRACTOR SHALL NOTIFY ALL THOSE COMPANIES WHICH HAVE FACILITIES IN THE NEAR VICINITY OF THE CONSTRUCTION TO BE PERFORMED.
- PRIOR TO ORDERING PRECAST STRUCTURES, SHOP DRAWING SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL.
- THE CONTRACTOR SHALL PROTECT ALL MAJOR TREES FROM DAMAGE. NO TREE SHALL BE REMOVED WITHOUT PERMISSION OF THE OWNER, UNLESS SHOWN OTHERWISE.
- CLEARING AND GRUBBING OPERATIONS AND DISPOSAL OF ALL DEBRIS THEREFROM SHALL BE PERFORMED BY THE CONTRACTOR IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND ORDINANCES.
- ALL WASTE MATERIAL RESULTING FROM THE PROJECT SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, OR AS DIRECTED BY THE OWNER AT NO ADDITIONAL COST.
- ALL EXCAVATIONS SHALL BE UNCLASSIFIED. NO SEPARATE PAYMENT WILL BE MADE FOR ROCK EXCAVATION.
- THE CONTRACTOR SHALL CONTROL THE EROSION AND SILTATION DURING ALL PHASES OF CONSTRUCTION AND SHALL KEEP THE STREETS CLEAN OF MUD AND DEBRIS.
- THE CONTRACTOR SHALL CONTACT THE CITY'S DEVELOPMENT SERVICES ENGINEERING INSPECTION TO SCHEDULE A PRE-CONSTRUCTION MEETING WITH AN INSPECTOR PRIOR TO ANY LAND DISTURBANCE WORK AT (816) 969-1200.
- THE CONTRACTOR SHALL CONTACT THE RIGHT OF WAY INSPECTOR AT 816-969-1800 PRIOR TO ANY LAND DISTURBANCE ACTIVITIES WITHIN THE RIGHT OF WAY. THESE ACTIVITIES MAY REQUIRE A PERMIT.
- THE CONTRACTOR SHALL PROVIDE AND MAINTAIN ALL TRAFFIC HANDLING MEASURES NECESSARY TO ENSURE THAT THE GENERAL PUBLIC IS PROTECTED AT ALL TIMES. TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD-LATEST EDITION).
- ALL SANITARY SEWER LATERALS SHALL HAVE A TRENCH CHECK, CONSISTING OF FLOWABLE BACKFILL, INSTALLED DURING CONSTRUCTION. TRENCH CHECK SHALL EXTEND TO BOTTOM OF TRENCH, TO WIDTH OF TRENCH, TO 12 INCHES ABOVE PIPE. FOR A MINIMUM LENGTH OF 12 INCHES. TRENCH CHECK SHALL BE LOCATED AT LEAST 5 FEET FROM SANITARY MAIN.

UTILITIES:

- Existing utilities have been shown to the greatest extent possible based upon information provided to the Engineer. The contractor is responsible for contacting the respective utility companies and field locating utilities prior to construction and identifying any potential conflicts. All conflicts shall immediately be brought to the attention of the Engineer.
- The contractor shall be responsible for coordinating any required utility relocations. Utilities damaged through the negligence of the contractor shall be repaired at the contractor's expense.
- Contractor shall verify flow-lines and structure tops prior to construction, and shall notify Engineer of any discrepancies. Provide shop drawings for all precast and manufactured utility structures for review by the Engineer prior to construction of the structures.
- Utility Separation: Waterlines shall have a minimum of 10 feet horizontal and 2 feet vertical separation from all sanitary sewer lines, manholes, and sanitary sewer service laterals, as measured from edge to edge. If minimum separations can not be obtained, concrete encasement of the sanitary line shall be required 10 feet in each direction of the conflict.
- Payment for trenching, backfilling, pipe embedment, flowable fill, backfill materials, clean up, seeding, sodding and any other items necessary for the construction of the utility line shall be included in the contract price for the utility installation.
- The Contractor shall be responsible for contacting respective utility companies 48-hours in advance for the inspection of any proposed utility main extension or service line or service connection to any existing main.
- Trench spoils shall be neatly placed onsite adjacent to the trench, and compacted to prevent saturation and excess sediment runoff. Unsuitable materials, excess rock and shale, asphalt, concrete, trees, brush etc. shall be properly disposed of offsite. Materials may be wasted onsite at the direction of the Owner or his appointed representative. All excavation is considered unclassified, unless noted otherwise. Unclassified excavation for utility trenching is subsidiary to the unit price provided for the pipe. Any quantity provided for rock excavation is estimated based on the information provided to the Project Engineer. The Engineer has the authority to identify and define the physical characteristics to determine the classification. Unit price quantities for rock excavation will be paid at a trench width of the nominal pipe diameter of the installed main plus 18 inches. Contractor is required to dispose of excess rock from their trenches by disposing it in areas as specified by the Project Engineer.

NOTE:

CONTRACTOR SHALL OBTAIN ELEVATIONS AND LOCATIONS FOR ALL SANITARY SEWER SERVICE LINES AND SHALL SUPPLY THIS INFORMATION TO THE DESIGN ENGINEER FOR INCLUSION IN THE AS-BUILT RECORD DRAWINGS.

New City Requirements:

Flowable fill required per City specifications at all sanitary sewer structures.

Sheet List Table	
Sheet Number	Sheet Title
1	COVER SHEET
2	GENERAL LAYOUT
3	LINES B AND J PLAN AND PROFILE
4	LINES B AND L PLAN AND PROFILE
5	LINE K (STA 0+00 - 4+34.13) PLAN AND PROFILE
6	SANITARY SEWER DETAILS

APPROVED BY:

CITY ENGINEER _____ DATE _____
APPROVED FOR ONE YEAR FROM THIS DATE

OWNER/DEVELOPER:

CLAYTON PROPERTIES GROUP INC., DBA SUMMIT HOMES
BRAD KEMPF
120 SE 30TH STREET
LEE'S SUMMIT, MISSOURI
p (816) 246-6700
BRADLEY@SUMMITHOMESKC.COM



MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:

BM JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE RANSON ROAD. IT IS STAMPED JA45, 1987.

ELEV. = 1046.25

SCHLAGEL
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
14920 West 107th Street • Lenexa, Kansas 66215
(913) 492-5158 • Fax: (913) 492-8400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificates of Authority
#E2202003690F #LAC2001005237 #LS2002008695F

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

CORNERSTONE AT BAILEY FARMS, FIRST PLAT
SANITARY MAIN EXTENSION PLANS
1300 SE RANSON ROAD LEE'S SUMMIT, MO

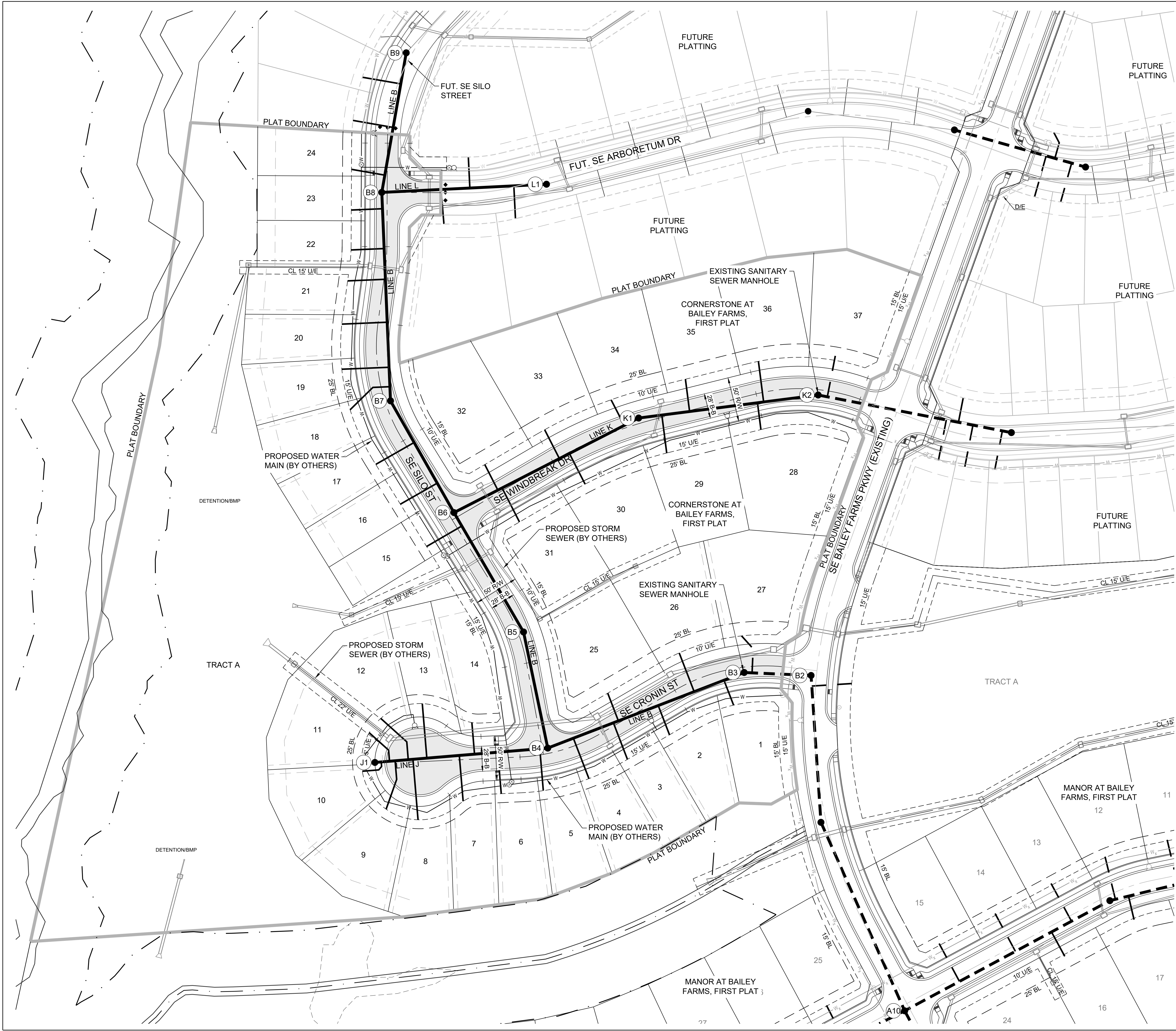
REVISION DATE	DESCRIPTION
1/17/22	PER CITY COMMENTS
04/20/2022	PER CITY COMMENTS DATED 02/28/2022
05/24/2022	PER CITY COMMENTS DATED 5/24/2022
11/30/2023	Added "New City Requirements" Note

DRAWN BY:	CHECKED BY:	DATE PREPARED:	PROJ. NUMBER:
NCA	JLL	12/20/2021	21-136

COVER SHEET

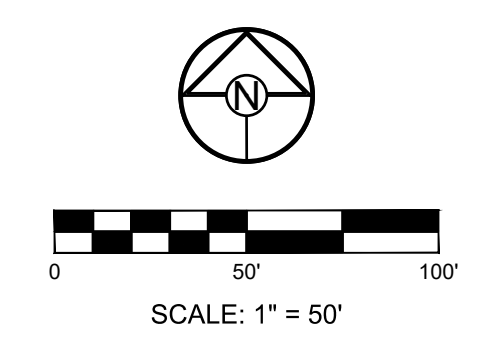
SHEET

I:\PROJECTS\2021\121-136\3.0 Design\3.0 DWG Plans\7.0 San\21-136 SAN-GEN.dwg, GENERAL LAYOUT, 11/30/2023 7:12:57 AM, 1:1



MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:
 BM JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE RANSON ROAD. IT IS STAMPED JA45, 1987.
 ELEV. = 1046.25

- GENERAL NOTES:**
1. ALL WYES ARE STATIONED USING MAIN LINE STATIONS.
 2. M.S.F.E DENOTES MINIMUM SEWERABLE FLOOR ELEVATION.
 3. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATIONS.
 4. ALL SERVICE LINES ARE TO BE 90° TO THE MAIN UNLESS OTHERWISE NOTED.
 5. ALL SANITARY SEWER MANHOLES ARE 4' DIAMETER UNLESS OTHERWISE NOTED.



SCHLAGEL
 ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
 14920 West 107th Street • Lenexa, Kansas 66215
 (913) 492-5158 • Fax: (913) 492-8400
 WWW.SCHLAGELASSOCIATES.COM
 Missouri State Certificates of Authority
 #E2002003690F #LAC201005237 #LS2002008695F

PREPARED BY:

 JAMES L. LONG
 117302023
 NUMBER
 EX-2014010495
 PROFESSIONAL ENGINEER

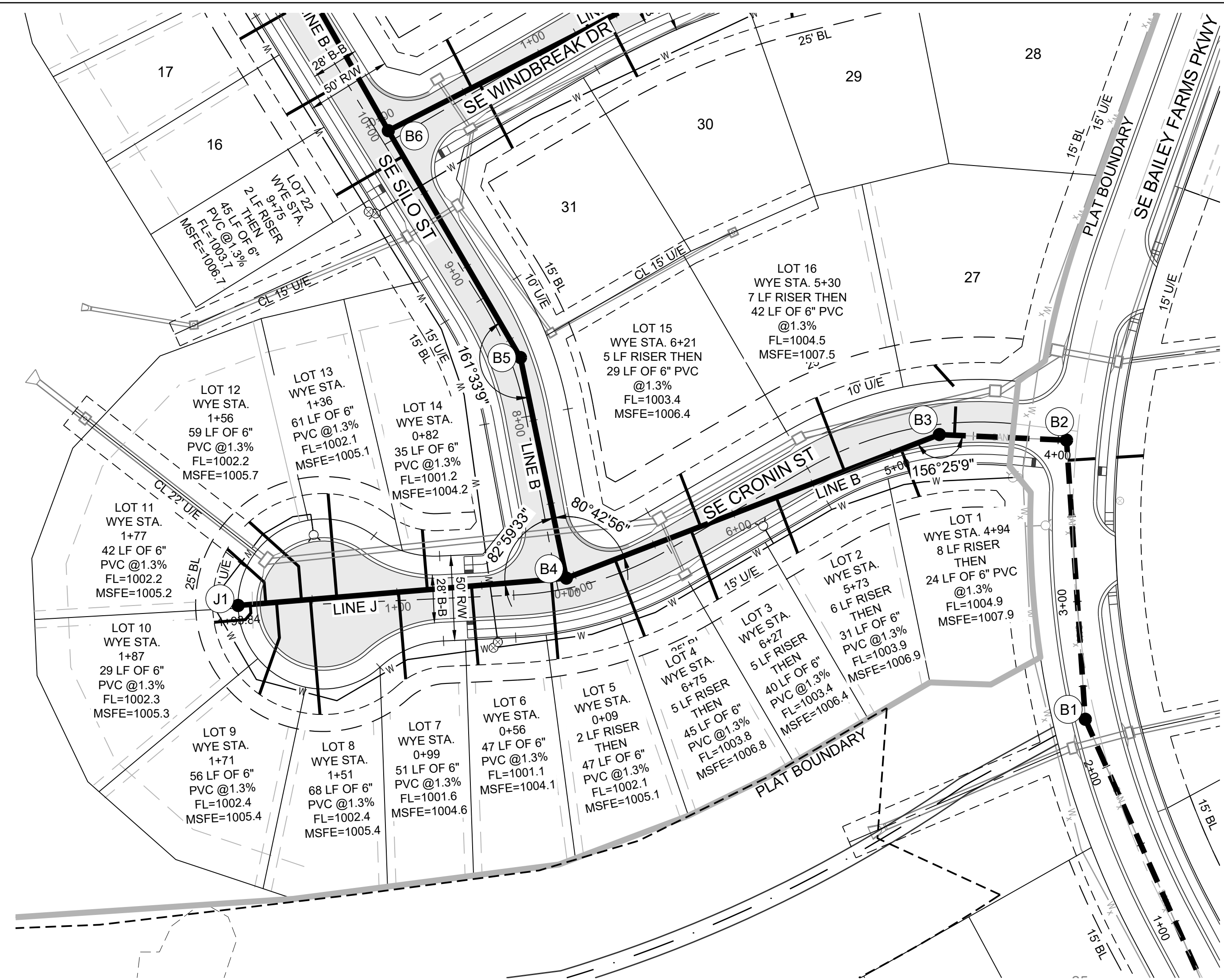
SCHLAGEL & ASSOCIATES, P.A.

**CORNERSTONE AT BAILEY FARMS, FIRST PLAT
 SANITARY MAIN EXTENSION PLANS
 1300 SE RANSON ROAD LEE'S SUMMIT, MO**

REVISION DATE	DESCRIPTION
01/26/2022	PER CITY COMMENTS DATED 02/28/2022
04/20/2022	PER CITY COMMENTS DATED 02/28/2022
05/24/2022	PER CITY COMMENTS DATED 5/24/2022
11/30/2023	Added "New City Requirements" Note

DRAWN BY:	JRJ
CHECKED BY:	JLL
DATE PREPARED:	12/20/2021
PROJ. NUMBER:	21-136

GENERAL LAYOUT
 SHEET
2



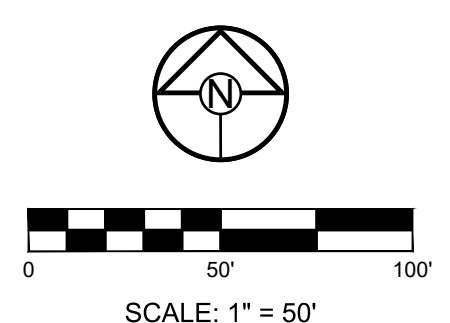
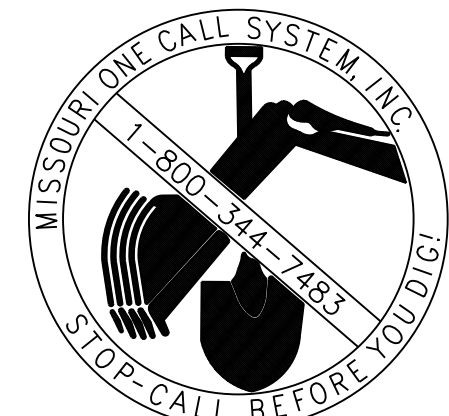
MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:

BM JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE RANSON ROAD. IT IS STAMPED JA45, 1987.

ELEV. = 1046.25

GENERAL NOTES:

- ALL WYES ARE STATIONED USING MAIN LINE STATIONS.
- M.S.F.E DENOTES MINIMUM SEWERABLE FLOOR ELEVATION.
- THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATIONS.
- ALL SERVICE LINES ARE TO BE 90° TO THE MAIN UNLESS OTHERWISE NOTED.
- ALL SANITARY SEWER MANHOLES ARE 4' DIAMETER UNLESS OTHERWISE NOTED.



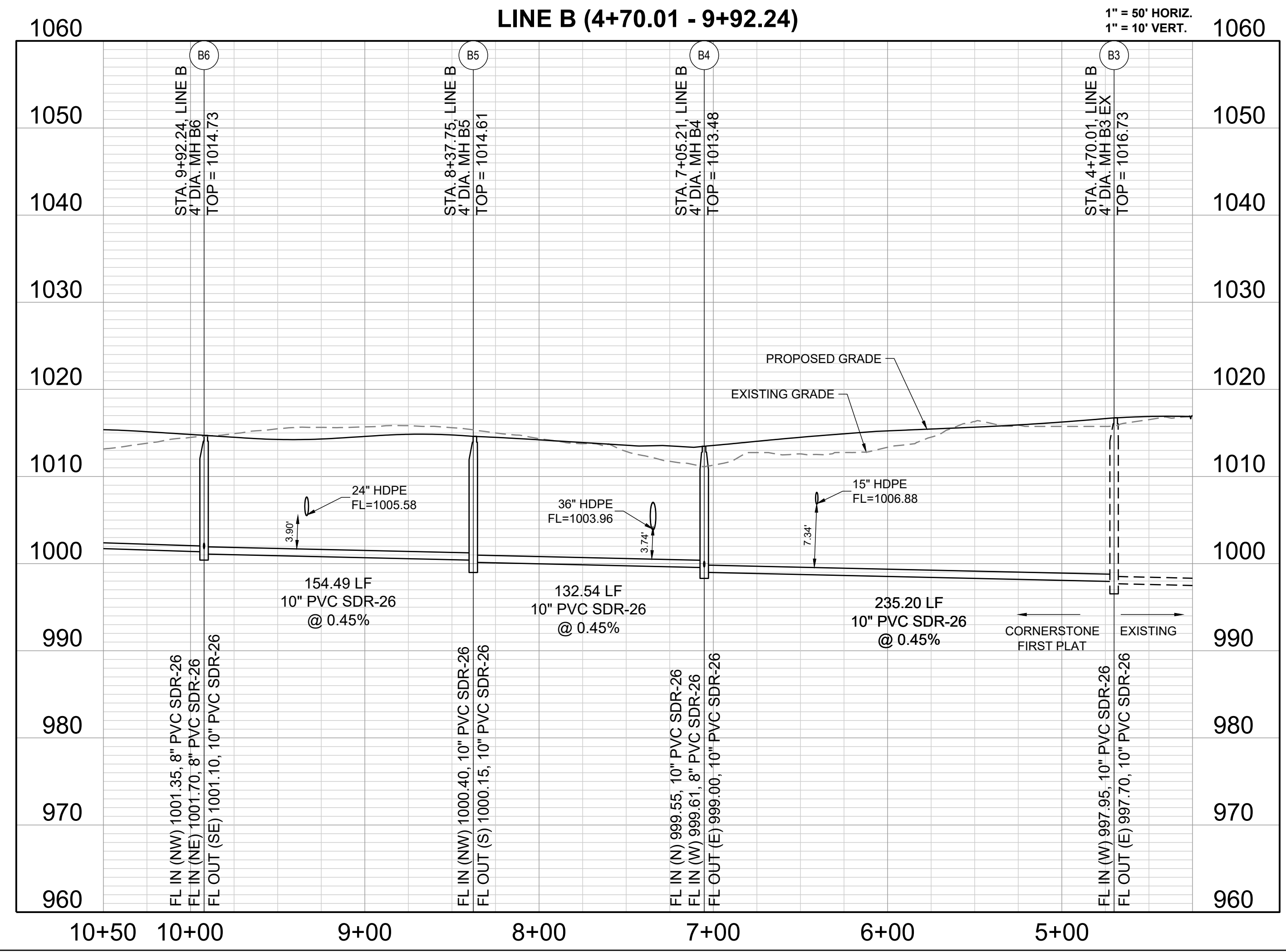
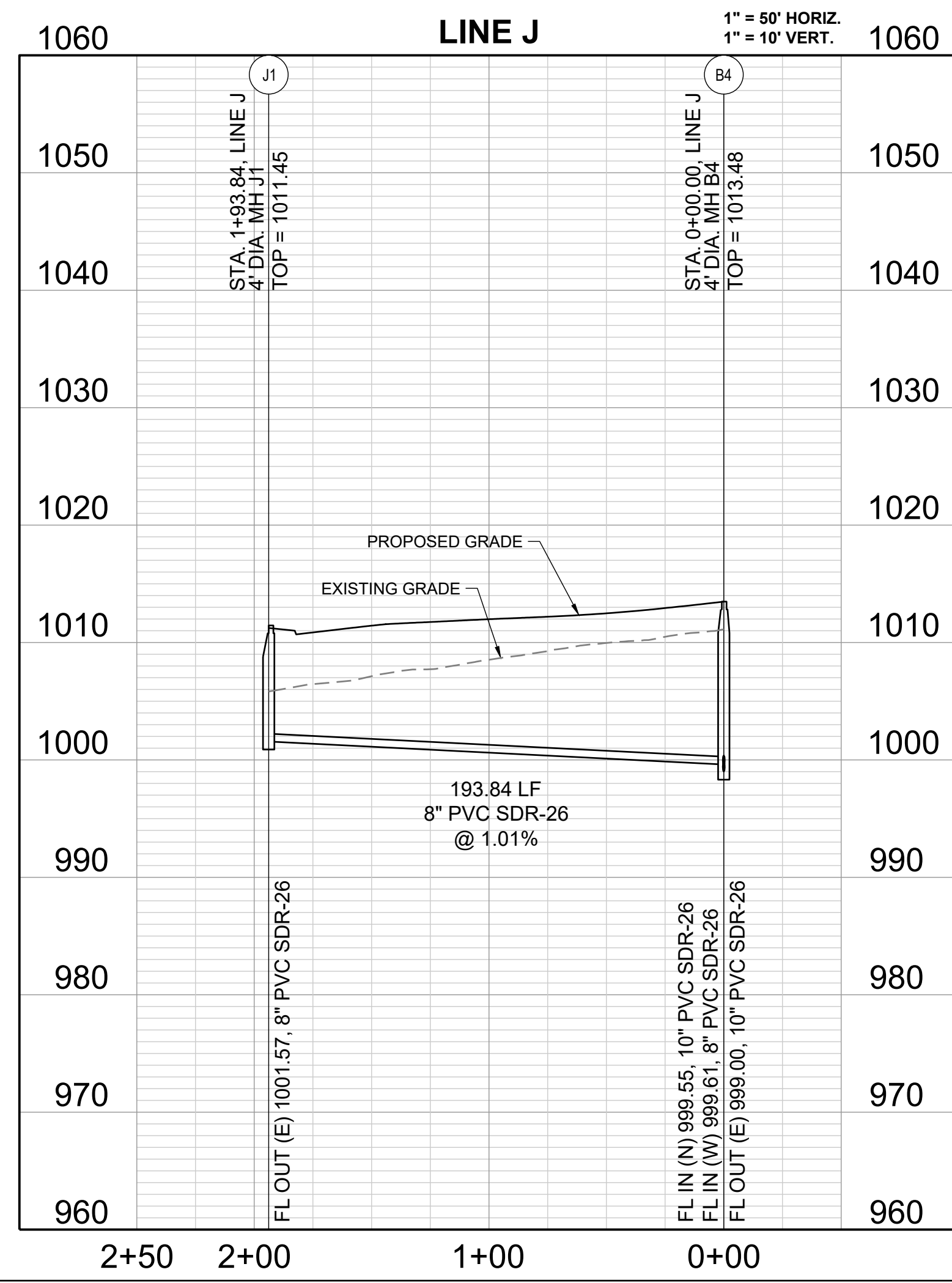
SCHLAGEL
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
14920 West 107th Street • Lenexa, Kansas 66215
(913) 492-5158 • Fax: (913) 492-8400
WWW.SCHLAGELASSOCIATES.COM
Missouri State Certificates of Authority
#E200200360P-F #LAC2001005237 #LS2002008659-F

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

**CORNERSTONE AT BAILEY FARMS, FIRST PLAT
SANITARY MAIN EXTENSION PLANS**
1300 SE RANSON ROAD LEE'S SUMMIT, MO



REVISION DATE	DESCRIPTION
01/26/2022	PER CITY COMMENTS
04/20/2022	PER CITY COMMENTS DATED 02/28/2022
05/24/2022	PER CITY COMMENTS DATED 5/24/2022
11/30/2023	Added "New City Requirements" Note

LINES B AND J
PLAN AND
PROFILE

SHEET
3

MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:

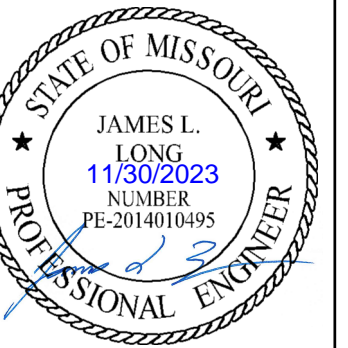
BM JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE RANSON ROAD. IT IS STAMPED JA45, 1987.

ELEV. = 1046.25

GENERAL NOTES:

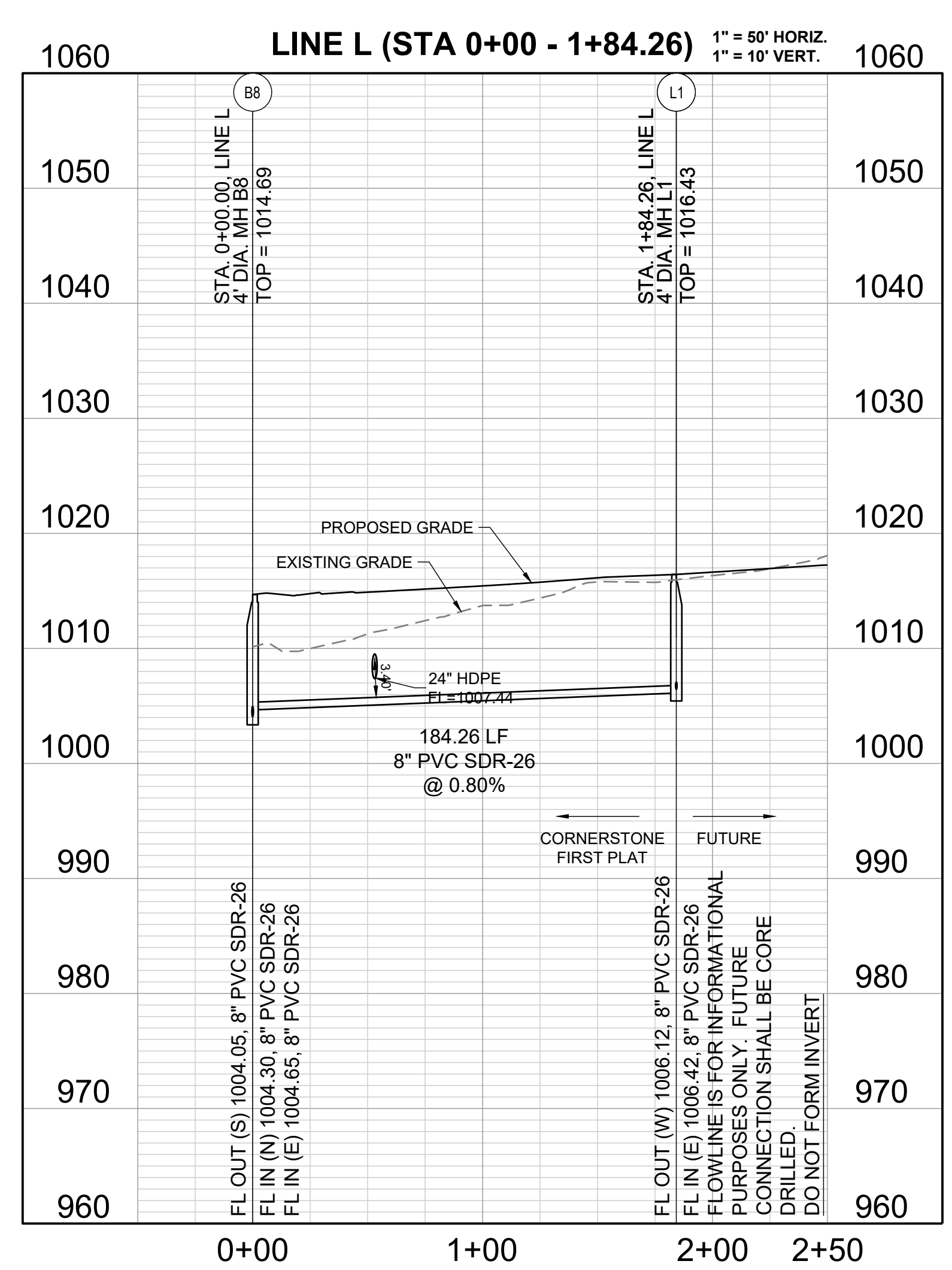
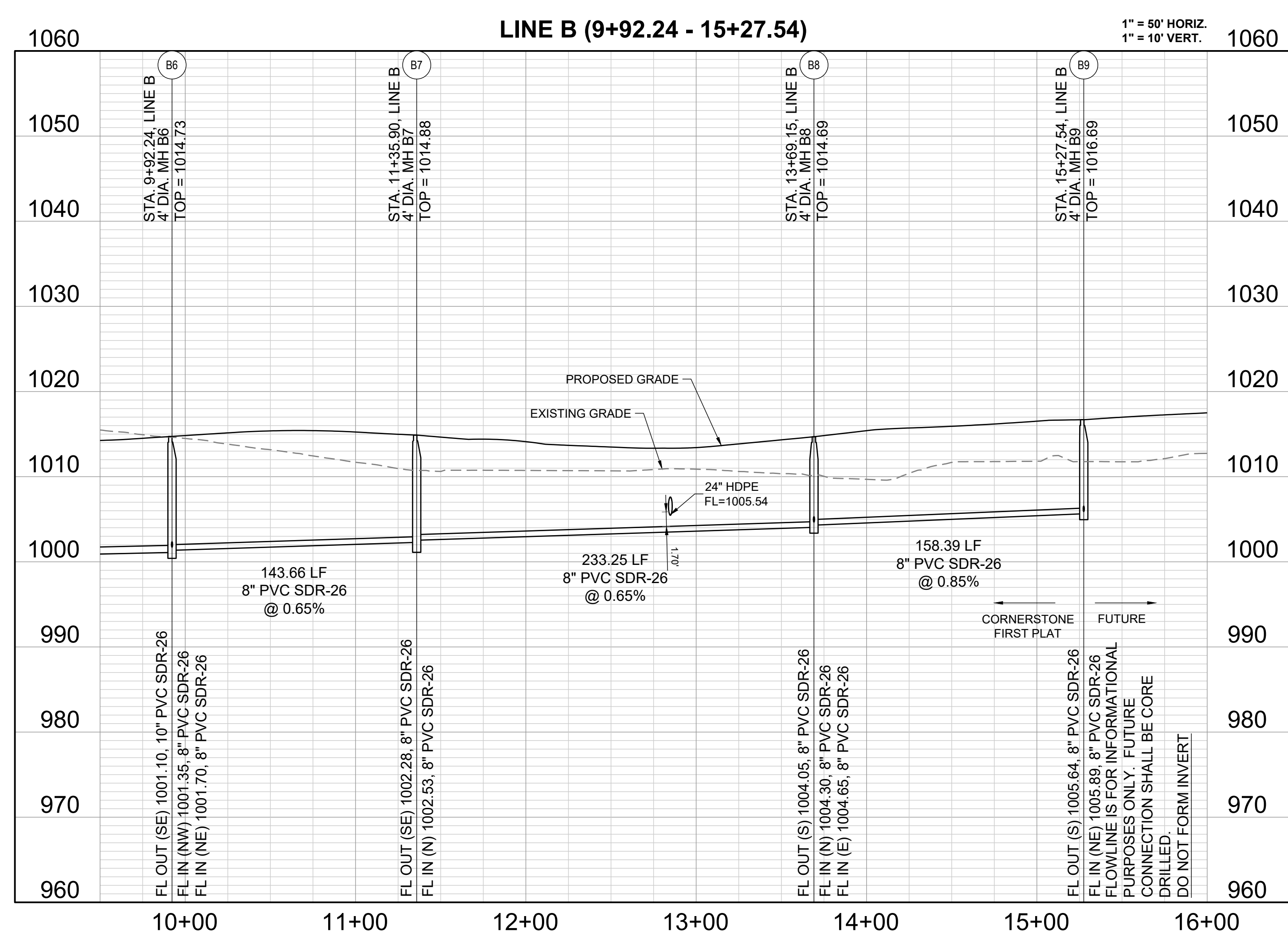
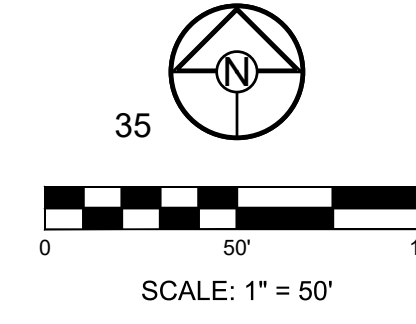
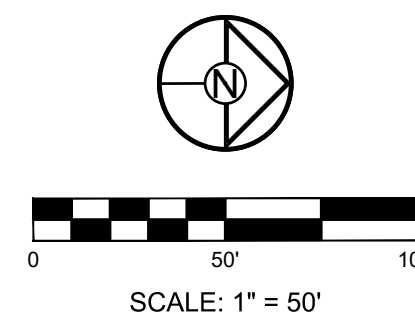
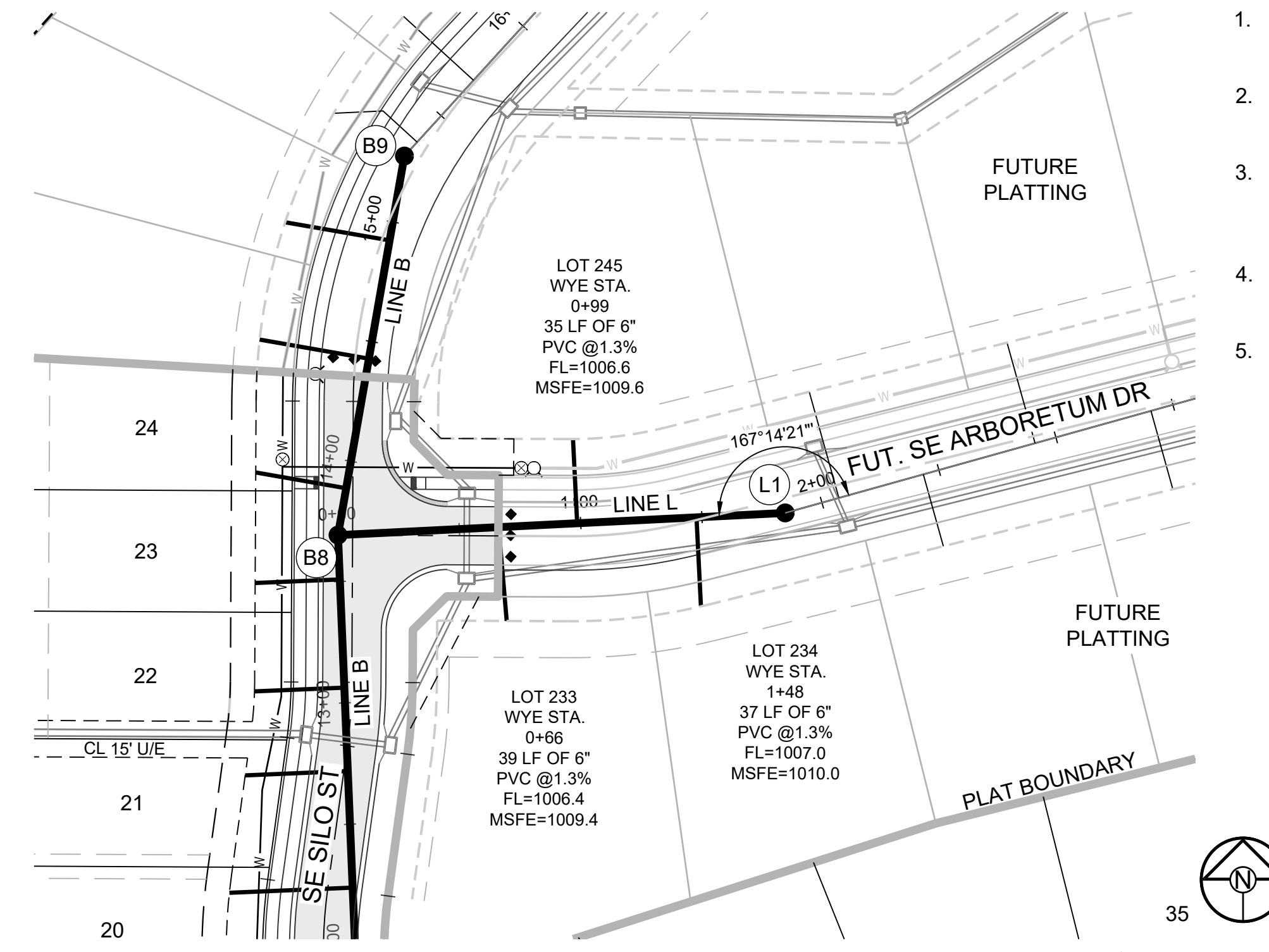
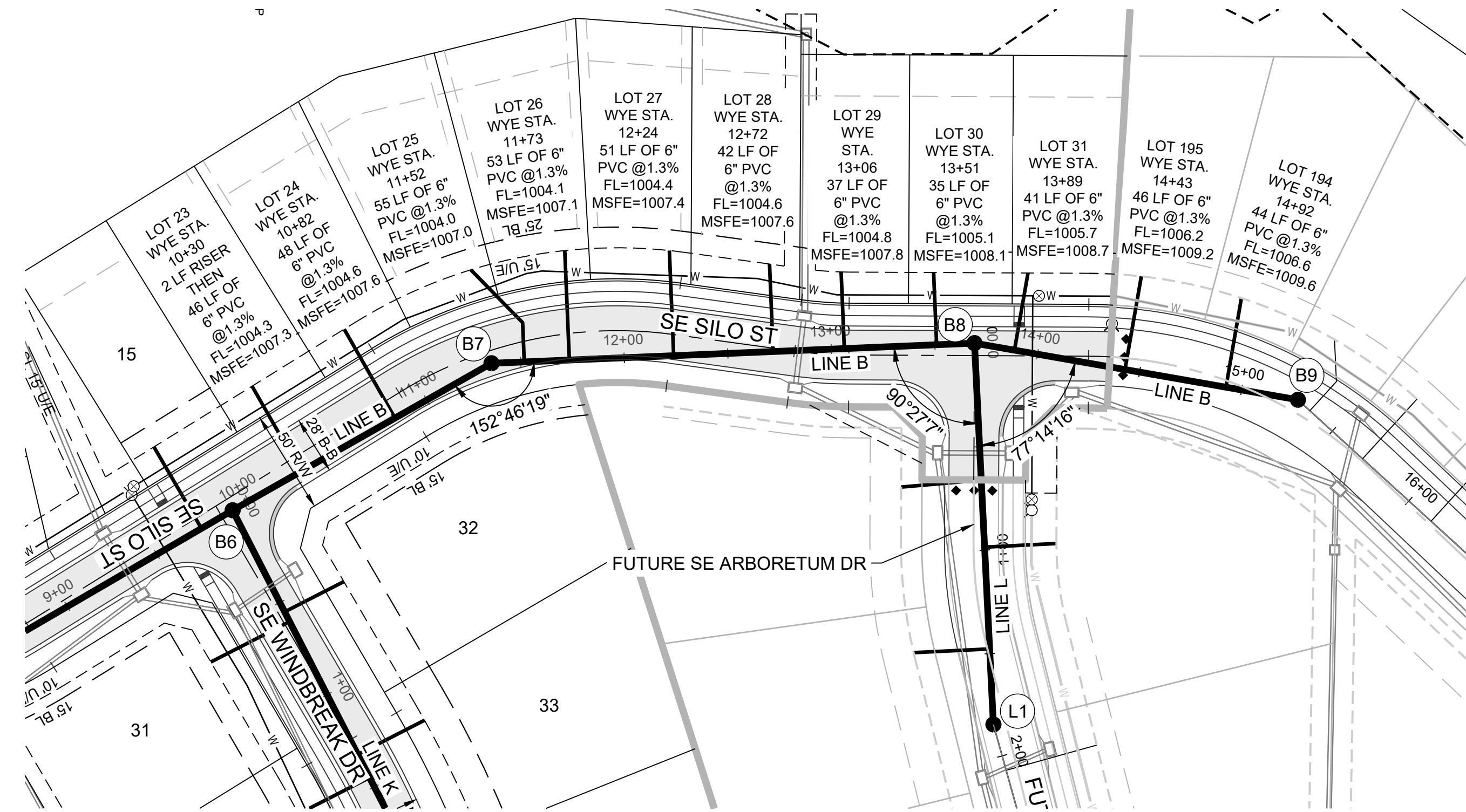
1. ALL WYES ARE STATIONED USING MAIN LINE STATIONS.
2. M.S.F.E DENOTES MINIMUM SEWERABLE FLOOR ELEVATION.
3. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATIONS.
4. ALL SERVICE LINES ARE TO BE 90° TO THE MAIN UNLESS OTHERWISE NOTED.
5. ALL SANITARY SEWER MANHOLES ARE 4' DIAMETER UNLESS OTHERWISE NOTED.

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

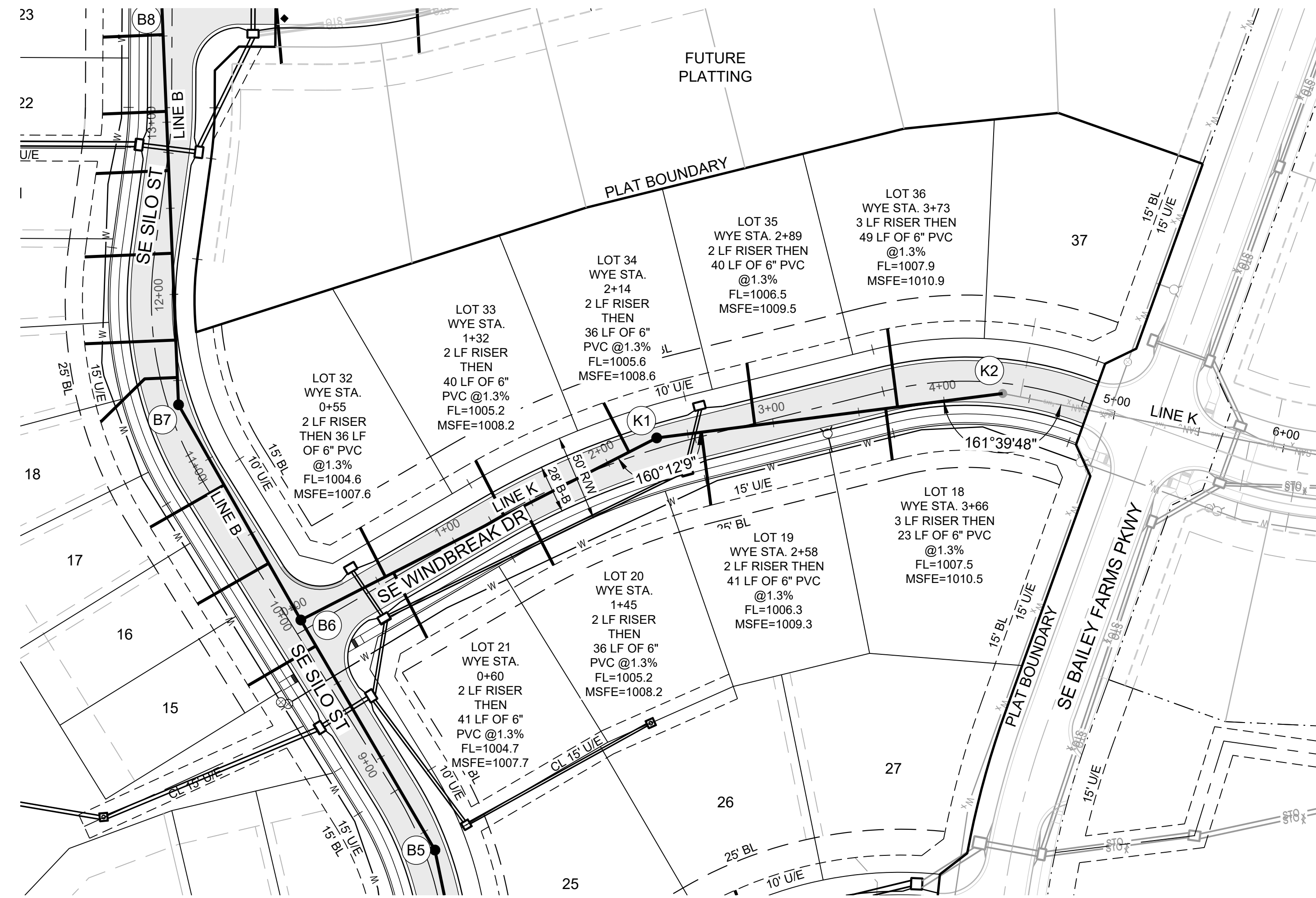
**CORNERSTONE AT BAILEY FARMS, FIRST PLAT
 SANITARY MAIN EXTENSION PLANS
 1300 SE RANSON ROAD LEE'S SUMMIT, MO**



REVISION DATE	DESCRIPTION
01/26/2022	PER CITY COMMENTS
04/20/2022	PER CITY COMMENTS DATED 02/28/2022
05/24/2022	PER CITY COMMENTS DATED 5/24/2022
11/30/2023	Added "New City Requirements" Note

LINES B AND L
 PLAN AND
 PROFILE

I:\PROJECTS\2021\121-136\3.0 Design\3.0 DWG Plans\1-136 SAN-PP.dwg, LINE B AND L PLAN AND PROFILE, 11/30/2023 7:13:47 AM, 1:1



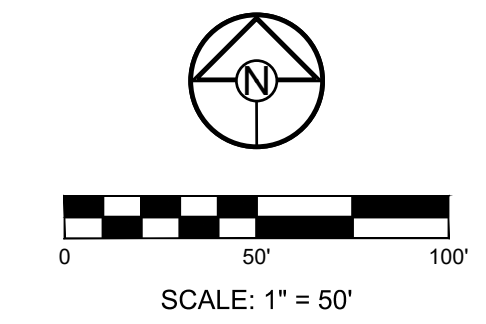
MISSOURI GEOGRAPHIC REFERENCE SYSTEM BENCHMARK:

BM JA-45, IS A KC METRO ALUMINUM GRS DISK SET IN CONCRETE AND ABOUT 3 INCHES BELOW THE PAVEMENT ON THE SHOULDER OF SE RANSON ROAD. IT IS STAMPED JA45, 1987.

ELEV. = 1046.25

GENERAL NOTES:

1. ALL WYES ARE STATIONED USING MAIN LINE STATIONS.
2. M.S.F.E DENOTES MINIMUM SEWERABLE FLOOR ELEVATION.
3. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL EXISTING UTILITY LOCATIONS PRIOR TO EXCAVATIONS.
4. ALL SERVICE LINES ARE TO BE 90° TO THE MAIN UNLESS OTHERWISE NOTED.
5. ALL SANITARY SEWER MANHOLES ARE 4' DIAMETER UNLESS OTHERWISE NOTED.



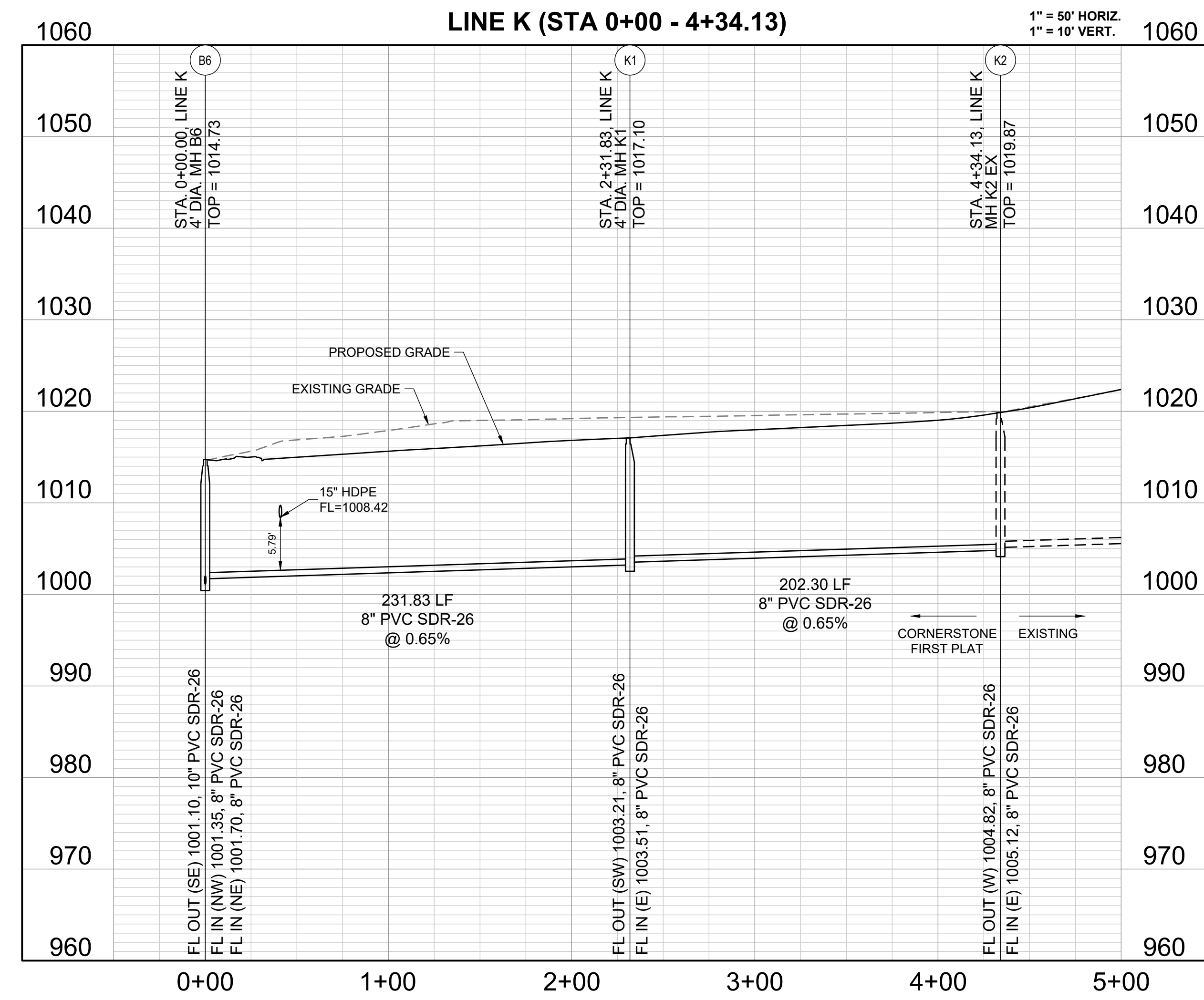
SCHLAGEL
 ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS
 14920 West 107th Street • Lenexa, Kansas 66215
 (913) 492-5158 • Fax: (913) 492-8400
 WWW.SCHLAGELASSOCIATES.COM
 Missouri State Certificates of Authority
 #E200200360P-F #LAC200100237 #LS200200869F

PREPARED BY:



SCHLAGEL & ASSOCIATES, P.A.

**CORNERSTONE AT BAILEY FARMS, FIRST PLAT
 SANITARY MAIN EXTENSION PLANS
 1300 SE RANSON ROAD LEE'S SUMMIT, MO**

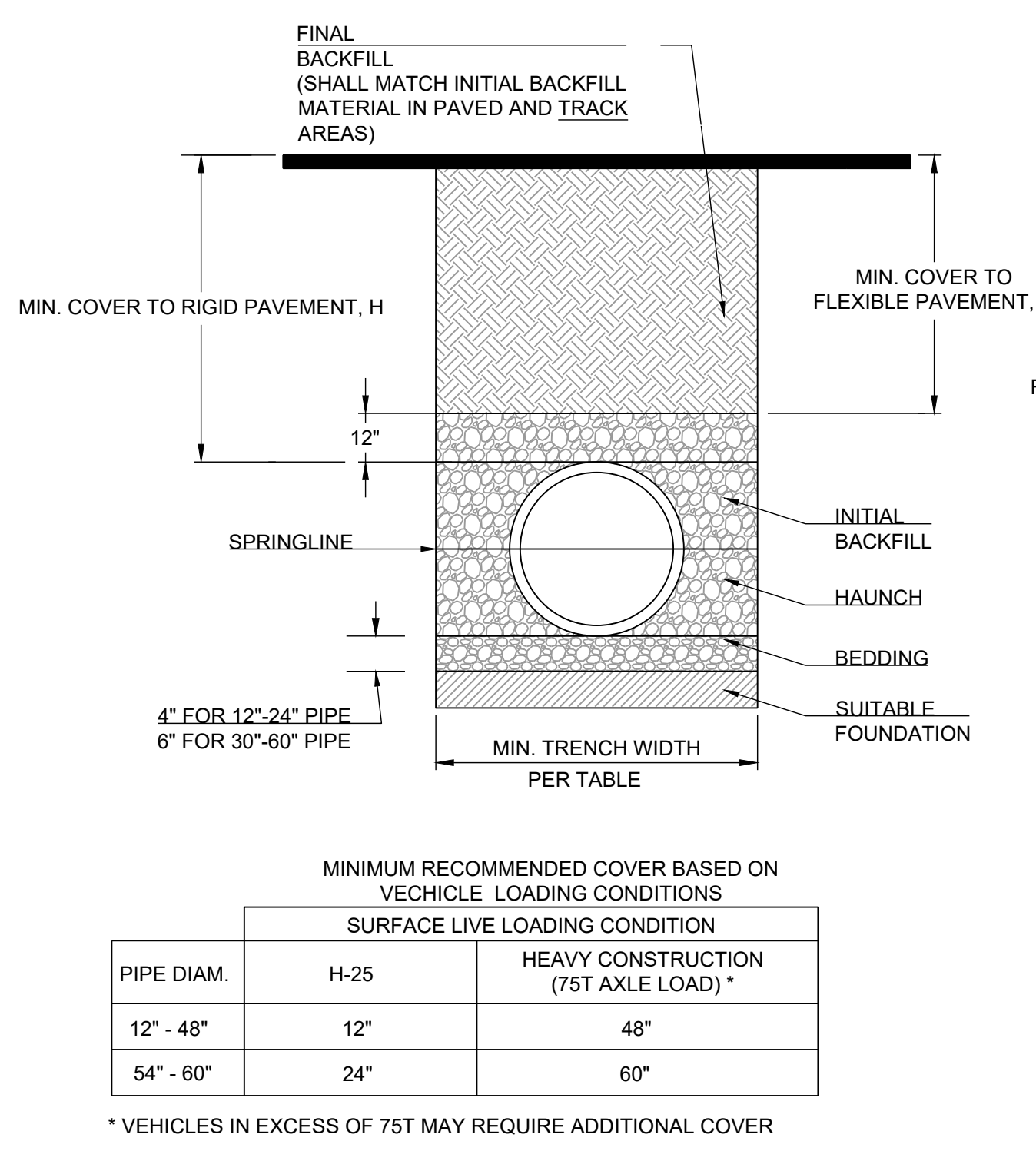
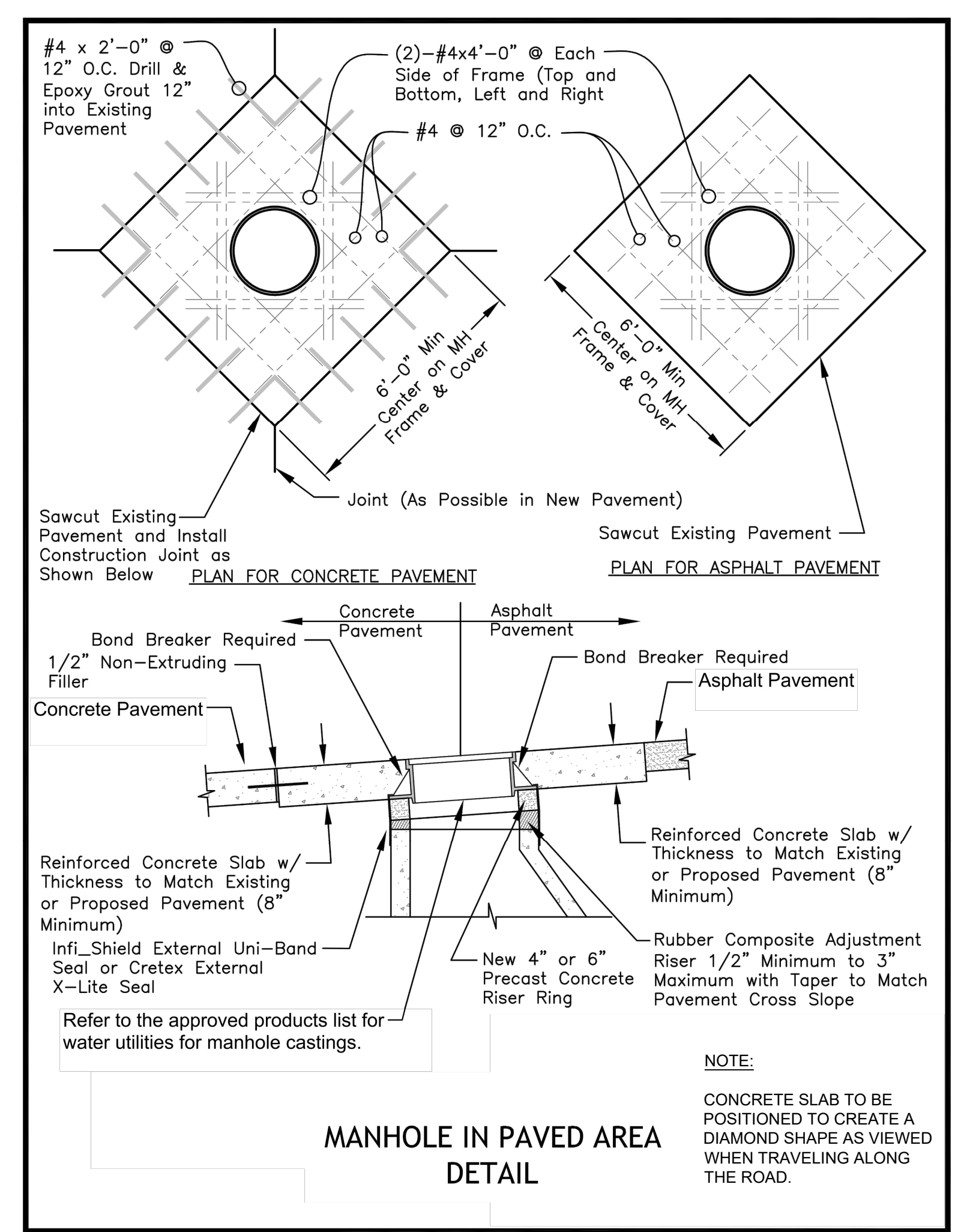
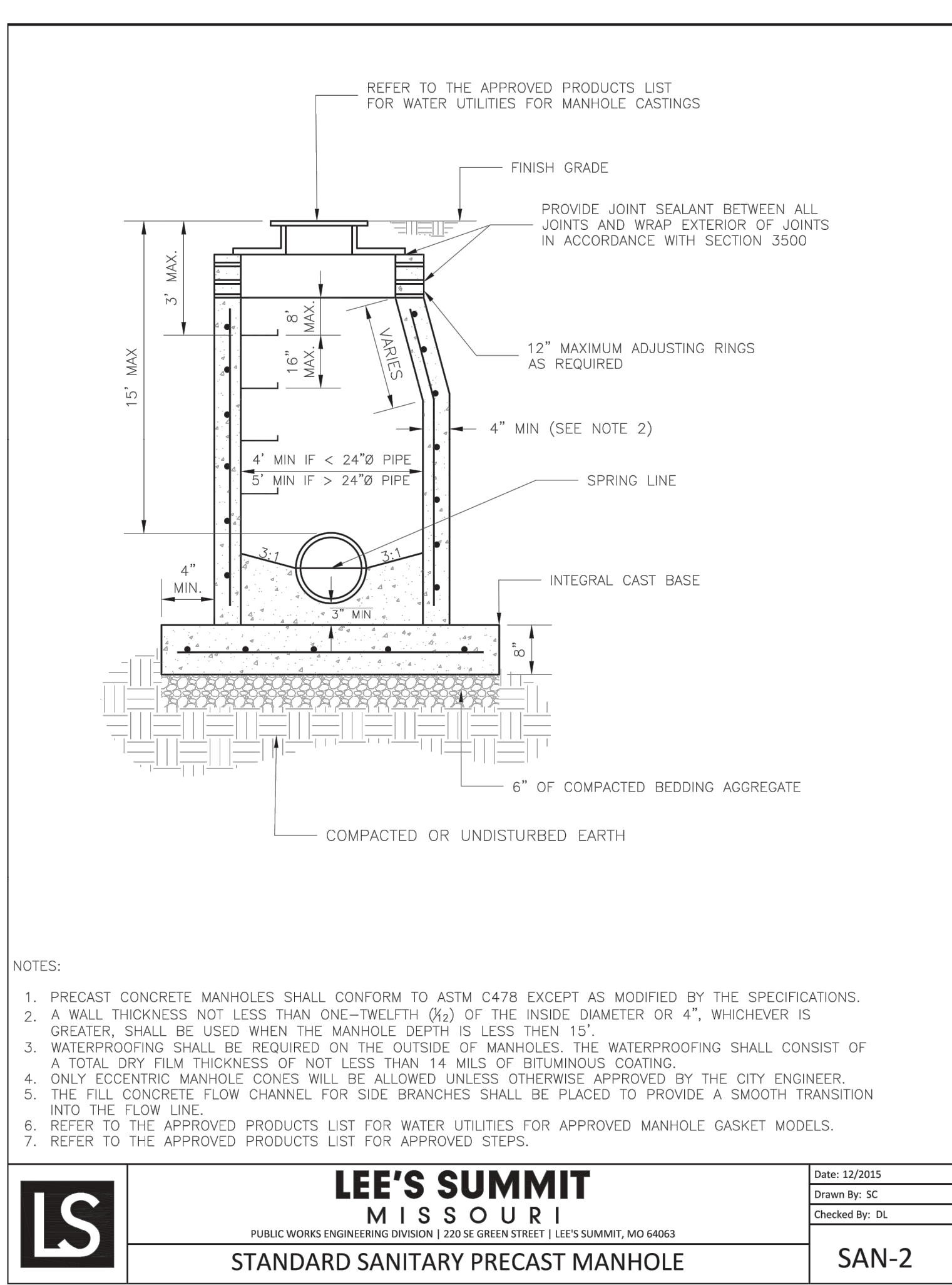


REVISION DATE	DESCRIPTION
01/26/2022	PER CITY COMMENTS
04/20/2022	PER CITY COMMENTS DATED 02/28/2022
05/24/2022	PER CITY COMMENTS DATED 5/24/2022
11/30/2023	Added "New City Requirements" Note

LINE K (STA 0+00 - 4+34.13) PLAN AND PROFILE

SHEET
5

REVISION DATE	DESCRIPTION
01/26/2022	PER CITY COMMENTS DATED 02/28/2022
04/20/2022	PER CITY COMMENTS DATED 02/24/2022
05/24/2022	PER CITY COMMENTS DATED 02/24/2022
11/30/2023	Added "New City Requirements" Note



- NOTES:
- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST EDITION
 - MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
 - FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER, AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
 - BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (750mm-900mm).
 - INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
 - MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

